

Having thus described the preferred embodiment, the invention is now claimed to be:

1. A method for converting a specified color value from a first color space to a second color space, the method comprising:

identifying the specified color value in the first color space;

receiving a converted color space value from a final lookup table,

5 the converted color space value being previously determined as a function of the specified color value and a mid-point interpolation and representing the specified color in the second color space; and

storing the converted color space value in a memory device.

2. The method for converting a color value as set forth in claim 1, further including:

before the receiving step, creating the final lookup table as a

5 function of an initial lookup table, which has a lower resolution relative to the final lookup table and includes a plurality of the conversion values.

3. The method for converting a color value as set forth in claim 1, wherein the receiving step includes:

for a current color of interest, performing a number of mid-point interpolations, as a function of the resolution of the final lookup table.

4. The method for converting a color value as set forth in claim 3, wherein the step of performing a mid-point interpolation includes:

determining an anchor vertex, which is defined within the final lookup table, as a function of the current color;

5 determining a first current vertex, which is defined within the final lookup table, as a function of the current color and the anchor vertex; and

determining a current intermediate color by performing a mid-point interpolation as a function of the anchor and first current vertices.

5. The method for converting a color value as set forth in claim 4, wherein if more than one mid-point interpolation is performed, the method further includes:

5 determining a second current vertex, which is defined within the final lookup table, as a function of the current color, the anchor vertex, and the first current vertex; and

determining a second current intermediate color by performing a mid-point interpolation as a function of the second current vertex and one of the anchor and first current vertices.

6. The method for converting a color value as set forth in claim 4, wherein the steps of determining the anchor vertex and the current vertex include:

5 determining a vertex, which is defined within the final lookup table, as a function of a node in the first color space having largest coordinates less than corresponding coordinates of the specified color.

7. The method for converting a color value as set forth in claim 1, wherein the receiving step includes:

5 if the final lookup table is less than a predefined resolution, receiving a plurality of intermediate color space conversion values from the final lookup table, the converted color space value being determined as a function of the intermediate color space conversion values.

8. The method for converting a color value as set forth in claim 7, wherein if the predefined resolution is half the resolution of the input colors, the step of receiving the plurality of conversion values from the final lookup table includes:

5 receiving two conversion values from the final lookup table.

9. A method for producing a pixel value in a final color space, the method comprising:

receiving the pixel value, which is represented in an initial color space, into a processing device;

5 identifying a transformed pixel value, which represents the pixel value in the final color space, as a function of the pixel value and a mid-point interpolation within a predefined lookup table;

producing the transformed pixel value in the final color space via an output device.

10. The method for producing a pixel value in a final color space as set forth in claim 9, wherein the producing step includes:

producing the transformed pixel in a xerographic environment.

11. The method for producing a pixel value in a final color space as set forth in claim 9, wherein the producing step includes:

producing the transformed pixel via a digital output device.

12. The method for producing a pixel value in a final color space as set forth in claim 9, wherein the identifying step includes:

performing a number of mid-point interpolations as a function of a resolution of the lookup table.

13. The method for producing a pixel value in a final color space as set forth in claim 9, wherein the identifying step includes:

determining an anchor vertex, which is defined within the lookup table, as a function of the pixel value;

5 determining a current vertex, which is defined within the lookup table, as a function of the pixel value and the anchor vertex; and

determining a current intermediate pixel value by performing the mid-point interpolation as a function of the anchor and current vertices.

14. The method for producing a pixel value in a final color space as set forth in claim 13, wherein the identifying step further includes:

determining a second current vertex, which is defined within the final lookup table, as a function of the current color, the anchor vertex, and the
5 current vertex; and

determining a second current intermediate color by performing a mid-point interpolation as a function of the second current vertex and one of the anchor and first current vertices.

15. A system for producing a specified color in a final color space, comprising:

means for identifying the specified color value in a first color space;
a processing device for receiving a converted color space value from
5 a lookup table, the converted color space value being previously determined as a function of the specified color value and a mid-point interpolation and representing the specified color in the final color space;

a memory device for storing the converted color space value; and
an output device for producing the converted color space value.

16. The system for producing a pixel value in a final color space as set forth in claim 15, wherein the converted color space values are previously stored in the lookup table.

17. The system for producing a pixel value in a final color space as set forth in claim 15, wherein the output device is a xerographic output device.

18. The system for producing a pixel value in a final color space as set forth in claim 15, wherein the output device is a digital output device.

19. The system for producing a pixel value in a final color space as set forth in claim 15, wherein the processing device performs the mid-point interpolation as a function of an anchor vertex, which is defined in the lookup table as a function of the pixel value, and a first current vertex which is defined in the
5 lookup table as a function of the pixel value and the anchor vertex, a current intermediate pixel value being determined via the mid-point interpolation as a function of the anchor and first current vertices.

20. The system for producing a pixel value in a final color space as set forth in claim 19, wherein the processing device performs an additional mid-point interpolation as a function of a second current vertex, which is defined within the lookup table as a function of the current pixel value, the anchor vertex, and the
5 first current vertex, a second current intermediate pixel value being determined via the mid-point interpolation as a function of the second current vertex and one of the anchor vertex and the first current vertex.